DATA SHEET

ESD NOISE CLIPPING DIODES NNCD5.6LH to NNCD6.8LH

LOW CAPACITANCE TYPE ELECTROSTATIC DISCHARGE NOISE CLIPPING DIODES (QUARTO TYPE: COMMON ANODE) 5-PIN SUPER SMALL MINI MOLD

This product series is a low capacitance type diode developed for ESD (Electrostatic Discharge) absorption. Based on the IEC1000-4-2 test on electromagnetic interference (EMI), the diode assures an endurance of no less than 8 kV, and capacitance is small with 10 pF between the terminal. This product series is the most suitable for the ESD absorption in the high-speed data communication bus such as USB.

With four elements mounted in the 5-pin super mini mold package, that product can cope with more high density assembling.

FEATURES

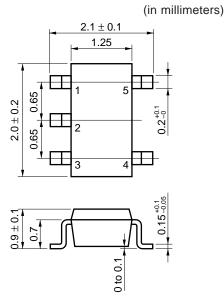
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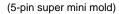
- Based on the electrostatic discharge immunity test (IEC1000-4-2), the product assures the minimum endurance of 8 kV.
- Capacitance is small with 10 pF (at $V_R = 0$ V, f = 1 MHz) between the terminal. It is excellent in the frequency characteristic.
- With 4 elements mounted (common anode) in the 5-pin super mini mold package, that product can cope with more high density assembling.

APPLICATIONS

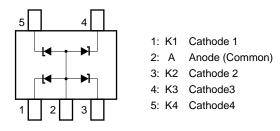
• External interface circuit ESD absorption in the high-speed data communication bus such as USB.

PACKAGE DIMENSIONS





PIN CONNECTION



MAXIMUM RATINGS (TA = 25° C)

Power Dissipation	Р	200 mW
Surge Reverse Power	Prsm	2W (t = 10 μ s, 1 p
Junction Temperature	Tj	150°C
Storage Temperature	Tstg	–55°C to +150°C

00 mW (Total) W (t = 10 μ s, 1 pulse) Fig.5

ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C) (A-K1, A-K2, A-K3, A-K4)

Type No	Breakdown Voltage ^{Note 1} V _{BR} (V)		Dynamic ^{Note 2} Impedance Ζ _z (Ω)		Reverse Leakage Iℝ (μA)		Capacitance Ct (pF)		ESD Voltage ^{Note 3} (kV)		
	MIN.	MAX.	l⊤ (mA)	MAX.	I⊤ (mA)	MAX.	Vr (V)	TYP.	Test Condition	MIN.	Test Condition
NNCD5.6LH	5.3	6.3	5	80	5	5	2.5	10	$V_R = 0 V$	8	C = 150 pF
NNCD6.2LH	5.7	6.7	5	50	5	2	3.0	8	f = 1 MHz	8	R = 330 Ω Contact
NNCD6.8LH	6.2	7.1	5	30	5	2	3.5	7		8	discharge

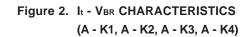
Notes 1. Tested with pulse (40 ms)

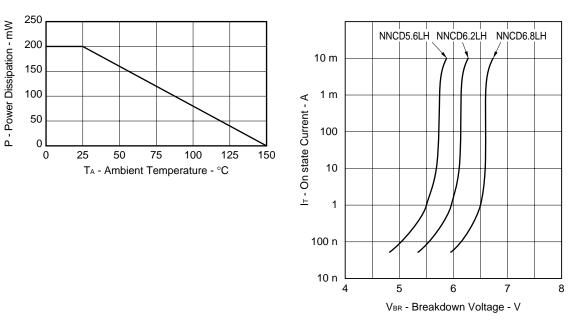
2. Z_z is measured at I_T given a small A.C. signal.

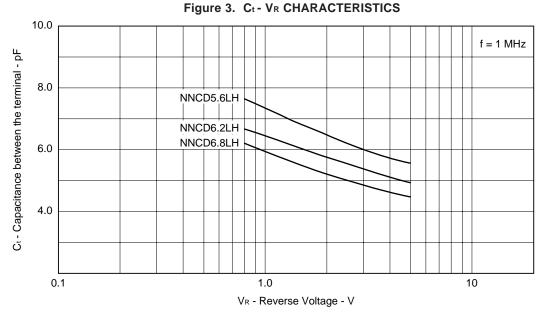
3. ESD voltage is measured based on the IEC1000-4-2 test on electromagnetic interference (EMI).

TYPICAL CHARACTERISTICS (T_A = 25° C)









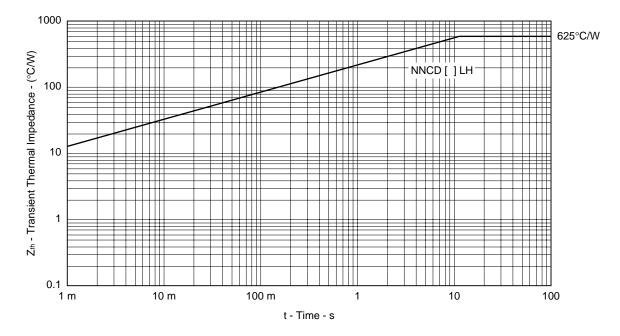
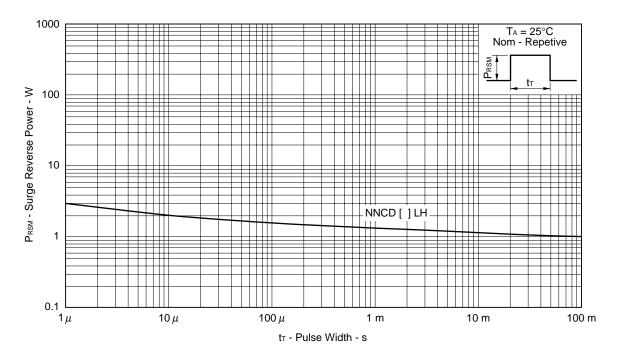


Figure 4. TRANSIENT THERMAL IMPEDANCE





REFERENCE

Document	Document No.		
NEC semiconductor device reliability/quality control system	C11745E		
NEC semiconductor device reliability/quality control system	MEI - 1201		
Quality grade on NEC semiconductor device	C11531E		
Semiconductor device mounting technology manual	C10535E		

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Anti-radioactive design is not implemented in this product.